Work Order ID 1 May-30-13 10:01:47 AM		*102546*								Page 1			
Item ID: 646.9711 Revision ID: Item Name: Blade		4	Accept	*N	9000)40°	100)*	Setup	Start Stop	I V I	S1*	
Start Date: 30/05/201 Required Date: 02/06/201 Reference:		*40* *40*			ust Item ID: ustomer:	:						57"	
Approvals: Process QC:		Date:	Tooling: SPC (Y/N):		Date		· ·		Run	Start Stop	" \	R1* R2*	
Sequence ID/ Work Center ID	Operation Description	, L.	Set Up/ Run Hours	1 7	Tool ID		Plan Code	Accept	t Re		Reject Number	Insp. Stamp	
	Revision Nbr											744	v
100 *100* Bandsaw Jeaspa Bandsaw	BAND SAW Memo Cut Blank a	t 4.625"	0.00	VH	3/0	5 30	H	45		Ø		•	*
*110 *110* HAAS 1 HAAS CNC vertical machine #1	HAAS CNC VERTICAL Memo 1-Machine p DWG REV: FOLIO REV	per folio FB135	0.00	OFE 11H	203-01 13/06/	603 05		40		5			. •

²⁻ deburr and break all sharp edges except otherwise noted

Work Orde May-30-13 10:0		2546		*	102	546*						Page	2
tem ID: Revision ID:	646.9711			Accept		*N900	040	100	7* s	etup Star	I M	S1*	
tem Name:	Blade					4				Stoj	, *N	S2*	
Start Date:	30/05/2013	Start Qty: 40.00	*40*			Cust Item I	D:					1	
Required Date: Reference:	02/06/2013	Req'd Qty: 40.00	*40*			Customer:							
Approvals:	Process Pla	n:	Date:	Tooling:		Da	ate:	_	R	tun Star	17	R1*.	
	QC:		Date:		N):	Da	ate:			Stop	*N	R2*	
Sequence ID/ Work Center II)	Operation Description		Set U		Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp	
20		QC2- Inspect parts off ma	chine FAI/FAIB	0.00		1						1	,
120 QC Quality Control		Memo		0.00	O M+	Fe ZO13-0 1 13/06/0			40	<u> </u>			L i
					113	1 13/06/0	/ 2						ı
130		QC8- Inspect parts - secon	nd check	0.00					11-				1
130 QC Quality Control		Memo		0.00	90	13/06/06			<u>40</u>	_Ø_			2
140 + 4 A O +		Outsource process - Heat	Treat	0.00		•			۸ (1 - 6			
140 Outsource1		Memo		0.00					$-c\alpha$	13/0	6/06	_90	-
Outsource process - I	Heat Treat		T AS PER DWG, SEE N	OTE #3									1
		ISSUE P/O:	20103										:

Work Ord <i>May-30-13 10:</i>		2546		Page 3					
Item ID: Revision ID: Item Name:	646.9711 Blade			Accept	*N900	04010	n * '	Setup Start Stop	*NS1* *NS2*
Start Date: Required Date: Reference:	30/05/2013 : 02/06/2013	Start Qty: 40.00 Req'd Qty: 40.00	*40* *40*		Cust Item II Customer:	D:			IVIO
Approvals:	Process Pla	n:	Date:	Tooling:	Da	te:		Run Start	*NR1*
	QC:		Date:	SPC (Y/N):	Da	te:		Stop	*NR2*
Sequence ID/ Work Center I 150 *150 Packaging Packaging	D	Operation Description Receive & Inspect for Da	nage & Mat'l Certs	Set Up/ Run Hours 0.00	Tool ID	Tool # Plan Code	Accept Qty		Reject Insp. Number Stamp
*155 *155* QC Quality Control		QC5- Inspect part comple	teness to step on W/O	0.00 0.00 Lestin)				·
*160 *160* SprayPaint Spray Painting		Spray Painting per QSI00 Memo PRIME AS P	ER DWG, SEE NOTE #4	0.00			-	·	· · · · · · · · · · · · · · · · · · ·
		PRIMER BA	тсн:		WHUS				

Work Ord <i>May-30-13 10:</i>		2546		*102	254	6 *					Page 4			
Item ID: Revision ID: Item Name: Start Date: Required Date	646.9711 Blade 30/05/2013: 02/06/2013	Start Qty: 40.00 Req'd Qty: 40.00	*40* *40*		C	900 ust Item I	040	100)*	Setup	Start Stop	I VI	S1* S2*	
Approvals:	Process Pla	an:	Date:	Tooling: SPC (Y/N):			ate:			Run	Start Stop	1711	R1* R2*	
Sequence ID/ Work Center I 170 *170* QC Quality Control 180 *180* Packaging	D	Operation Description QC14- Inspect Spray Pair Memo Identify as per dwg & Sto	Shy	Set Up/ Run Hours 0.00 0.00 0.00		Fool ID	Tool #	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp	
Packaging 190 *190* QC Quality Control		QC21- Final Inspection -	Work Order Release	0.00					<u> </u>	(3	_\3	<u>~06~</u>		

W 300 ll

May-30-13 10:01:30 AM

Work Order ID:

102546

Parent Item:

646.9711

Parent Item Name:

Blade

Start Date: 30/05/2013

Required Date: 02/06/2013

Start Qty: 40.00

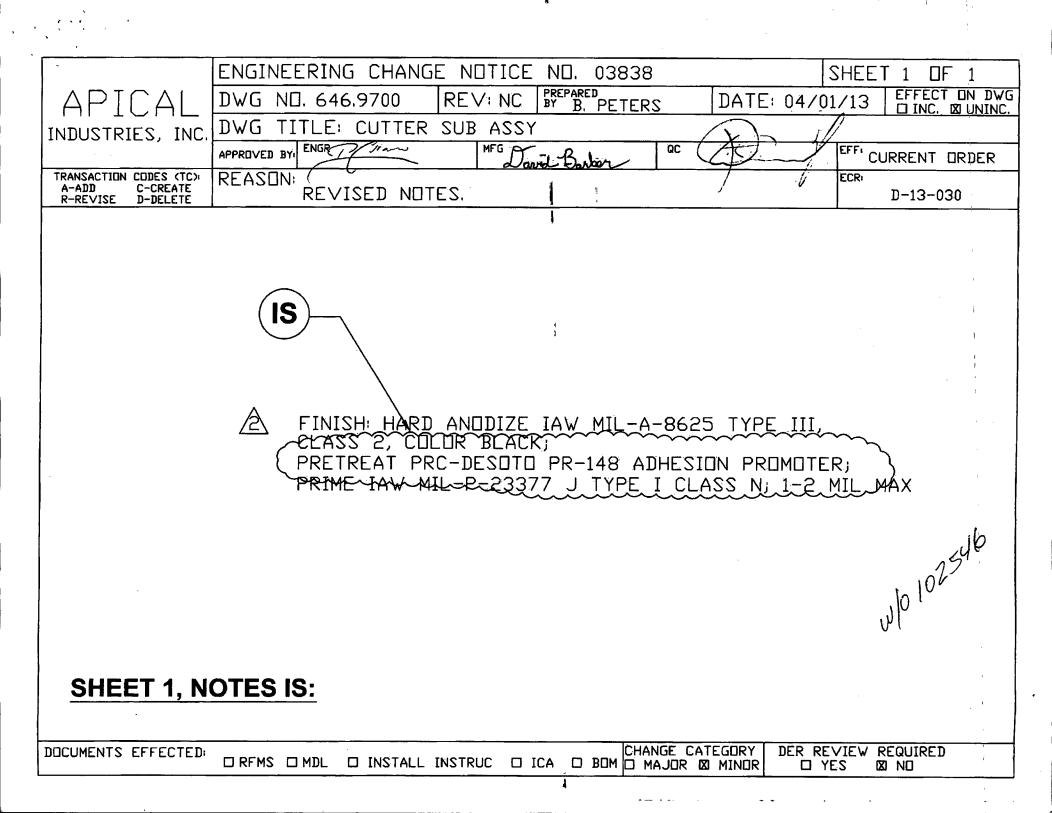
Required Qty: 40.00

Comments:

IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

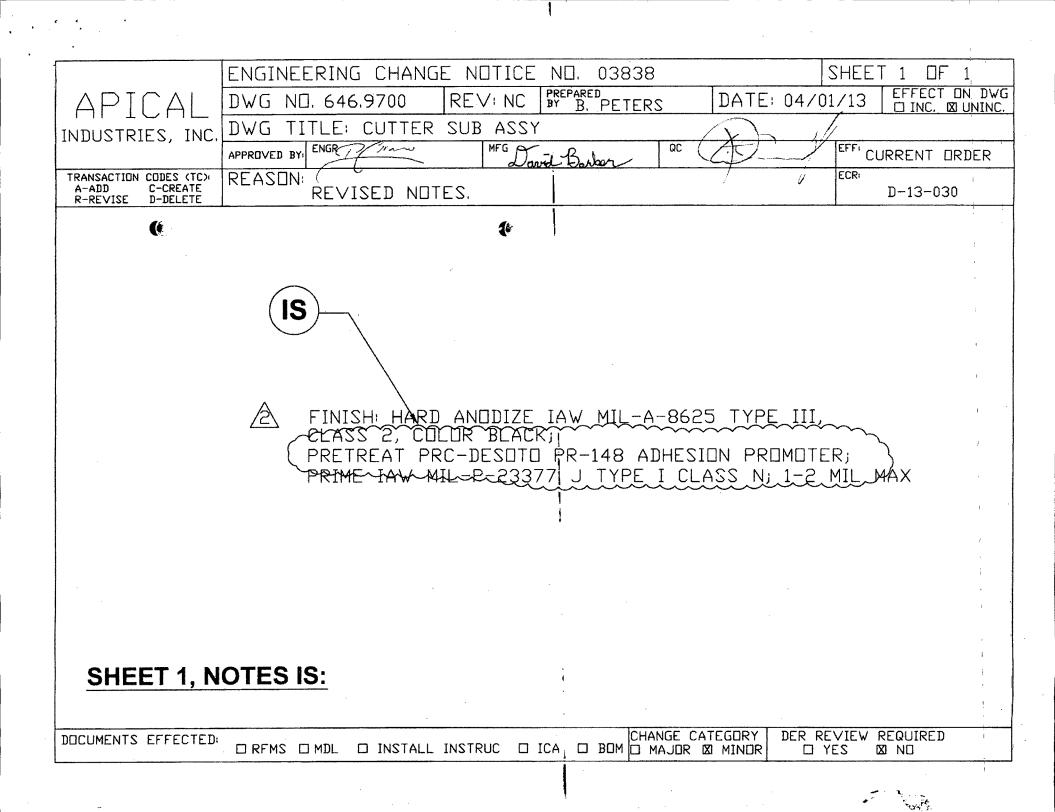
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	50.4411	0.386	16.252632	ı		
AIGUAD TOOL STEEL D	AD 0 500 V 1 350												

AISI A2 TOOL STEEL BAR, 0.500 X 1.250



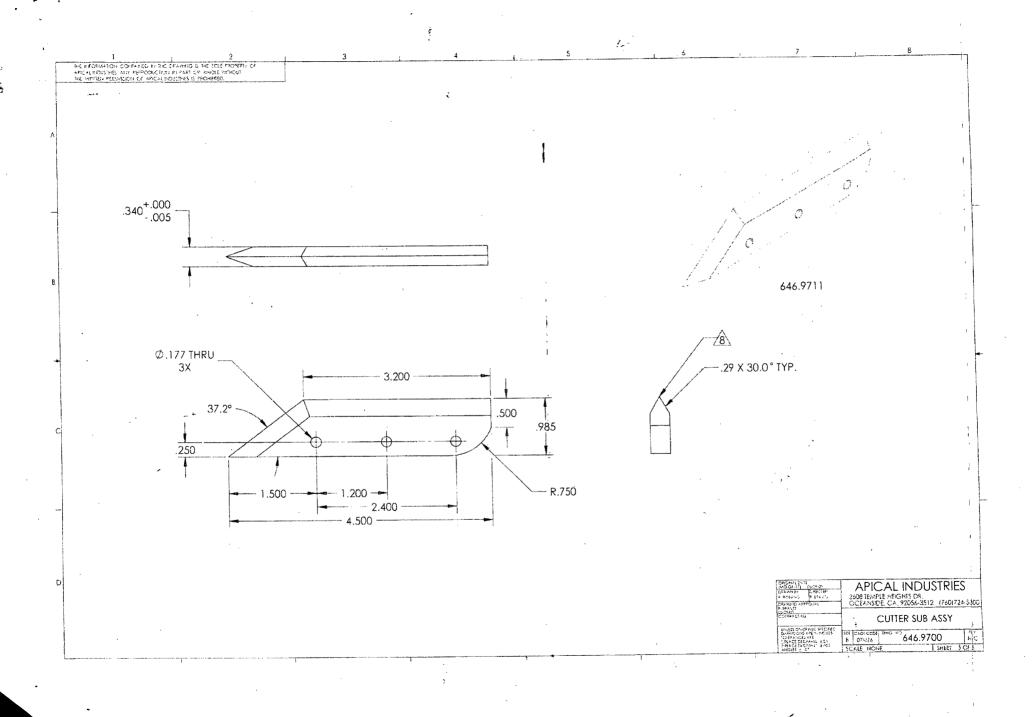
. '														•		-	:	
			ENC	SINE	ERIN	G CH	IANGE	NOT	IC' I	۷Ū.		0274	14		SHEE	T 1	OF !	1
	ΔΕ	PICAL	DW	G N	□, €	546.9	700	REVI	V/C B	REPARE:	B.H	UFF	DAT	E: 01/	07/10	EFFE(T ON .	DWG INC:
N	יי צוותו	TRIES, INC.	DW	G T	ITLE:				CUTT			YSSY		_			ı	
	200	1110, 1110,	APPRO	VED BY	ENGR	730	هر		G	19	30	tic /	Muld	Fire	EFF	NEXT OF	RDER	
- 4	RANSAC A-ADD R-REVI	TION CODES (TC): C-CREATE SE D-DELETE	REA	NDS	¦: RE∕√I	SED S	CREW	LENGT	I, CHAN	INEL	WIDTHS	S & D]	IMENSIÓN	ING SO	CHEME SI	HEET 5	. ;	
	SHEE	T 2, ZONE CE	IS:				SH	EET 5	ZONE	C2,]	<u>[S</u> :			1	-(IS)			
	(10)	.352*.005 2	:	.875	A	\	9 177 3x			3.	200	.702					0. TYP.	
	(1)		, -			>	.250	(1.500)1,5	00 -	1200		.691 750 R.75	985		(60.0*)	المسر	
) 4		35%	2+.005 2PL								,	102°	ماله
		. 10 ×45.0°	2PL—	13	x 45.0° ₹			(1.500)		-(IS)						h	0	M
			·····	$\stackrel{\textstyle \searrow}{\longrightarrow}$		ZECI	ION B-B											. i
	R 6	501.3157		12	SCREW					., ,		- N	1S27039-08	18	w ·			
NI:	TCE	PART NUMBER	QT	.9701 V	חבייי	RIPTIO	NI		<u> </u>		•		MATERI	Δ1 /SPE	CIFICAT	TΠN		1 4-
		TART NUMBER	 					XI ICA	A D FM	S (XII)	CHA	INGE C	ATEGURY MINUR	DER	REVIEW F		D	i





	ENGINE	ERING CHANGE NOTIC.	<u>N</u> □.	02744	
APICAL	DWG N		T	S.HUFF	DATE: 01/07/10 EFFECT ON DWG
INDUSTRIES, INC.	DWG T	ITLE: CUT	TER S	UB ASSY	
INDUSTRIES, INC.	APPROVED B	IY. ENGR BOOK THEG	A Ger	OC /	WILL From EFF! NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON	N: REWISED SCREW LENGTH, CH	ANNEL W	/ÎDTHS & DIM	NSIONING SCHEME SHEET 5.
SHEET 2, ZONE C	6, IS:	SHEET 5, ZON	E CZ. IS	<u>S</u> !	
352 ⁺ 000 10 x45	O, SEF	A 364 372* (1.500) (1.500)	-1.200 - (4.500)	1.200	R.750
		SECTION B-B			
3 R 601.3157	15	SCREW		MS	27039-0818
	.9701				
F/N TC PART NUMBER	QTY	DESCRIPTION			MATERIAL/SPECIFICATION TEGORY DER REVIEW REQUIRED
DOCUMENTS EFFECTED	' ☐ MDL	□ INSTALL INSTRUC 🖾 ICA □	FMS 🖾 E	CHANGE CAT	

(



DART AEROSPACE LTD	Work Order: 107	544
Description: BLACE	Part Number: GUG	.9711
Inspection Dwg: (Alaga) Rev: L	Pa	ige 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
,340	t0.00 /-0.05	0.338	\		MIC	Jrc-02
40.177	-0001/to.005	0.177	1		Calipa	JFC01
0.250	+1-0.005	0.249			(/	
4-500	И	4,500	V		1/	٧,
2.400		2-400	<u> </u>		4	t. t.
1.200	c,	1.200	U		-1	(
1-500	(1	1.500	U		در	` `
3.700	n	3.700	\cup		CI	l I
0,500	• (U.SUV			4	. · · · · · · · · · · · · · · · · · · ·
0.985	1.4	0-984			٠,	ι(
.29 × 30.0	+ - 0.010	291300	\lor	·	. (,	L
				·		
·						
			·			
	·					
1.00		-				

Measured by:	SFC	Audited by:	PO	Preliminary Approval:	,
Date:	2013-06-03	Date:	13/06/06	Date:	

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ.	

10.04.15

NÇR:	Yes /	No

Date:

DQA:

NCR: (Y	es / No				WORK ORDER NON-O	CONFO	RMANCE / UPD	DATE		*	The same	
weir.		•							QA Closed:	Date:		
Work Orde	r: 1025	546			DISPOSITION			AGAINST DE	EPARTMENT/PROCESS			
Part No. 646, 9711				Rework Scrap Use-as-is Work Order Update		Skid-tube Machining Ermoforming Large Fab	Crosstube Small Fab Finishing Composite	1	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other		
NCR N	···				Work Order opdate	<u> </u>	Large rab		1			
Root Cause				1	ption of work order update or Non-conformance	Initia Chief E	Į.	ion : iption	Sign & Date	Verification	QC Inspector	
Doc/Data Equip/Tooling				Part	lipted out of	OAS 16 9-81		·	MH 13/05/05	90	0As	
Operator Material Setup	<u>X</u> 13 06/05	110	S	vise under	and caused 1517e Operate Error	& May				13/06/06	16 2>2042	
Other Process				R.C.	Openta Erral	امحارده	los				037.042 13/06/d	
Supplier Training Unapproved	`						·					
Diiapproveu		l	1	<u> </u>	F	AULT CA	ATEGORY		<u></u>	L	. !	
Landii	ng Gear				General				_			
	Bending Centre N	ot Conce	ntric to	o/s	Bend BOM/Route	Gra Har	iin dware	X	Ovalized Over/Under	tolerance	Pressure/Forced Temperature/Cure	
	Cracks			· [Broken/Damaged		pection Incomplete		Part Incorre	-	Weld	
	Crushed/	'Crimped		_	Burrs	\vdash	ructions Incomplete/L		Part Lost/Mi		Wrong Stock Pulled	
	Cuffs				Contamination	 	intenance		Part Moved			
	Heat Trea			<u> </u>	Countersink	}	labeled	<u> </u>	Positioned V		704	
Inspection Strip in Tube			Cut Too Short	\vdash	read		Power Loss/	Surge	Other			
	Ripples in			\perp	Drill Holes	Off						
	Torque V	Vaves in	Extrusio	on L	Drawing	\vdash	of Calibration				 	
	Turning S	Seauence	<u> </u>	<u> </u>	Finish	T Out	t of Sequence				:	

Outside Dimensions

Wave/Twist in Tube

Folio



Dart Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K6A 1K7

Tel: 613 632 9577 Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO20103

Purchase Order Date 6/6/2013 PO Print Date 6/7/2013

Page Number 1 of 2

Order From:

VC-MET004

METCOR INC.

560 BOUL. ARTHUR SAUVE SAINT-EUSTACHE, QC J7R 5A8

CA

Contact Name

Vendor Phone

450 473 1884

Vendor Fax

450 491 5498

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms Currency Net 30 CAD

FOB

Destination-Collect

Ship To:

DART AEROSPACE LTD

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

CANADA



Line Nbr Reference Description/ Req Date/ Req Qty/ Ship Method **Unit Price** Extended Revision ID Mfg ID Taxable Unit of Measure Price Vendor Part Number 102546 646.9711 BLAD: 6/14/2013 40.00 FedEx Pl collect \$5.4000 \$216.00 Yes Special ensi: FINISH: HEAT TREAT TO 58-62 RC **ROCKWELL HARDNESS** PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED 102546 DETAIL C OF C 6/14/2013 1.00 FedEx PI collect \$48.0000 \$48.00 Yes 97924 D4456-2 RAINGHT 'ER' 6/14/2013 10.00 FedEx PI collect \$30.0000 \$300.00 Yes

> No substitution or deviation without consent.

Certificate of Conformity of Material Certification required -NO

Change Nbr:

2

Change Date: 6/7/2013

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC J7R 5A8 Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL	EXPÉDITEUR	BON D'EXPÉDITION
Order	Shipper ID	Shipper
186982	1	72262

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT / Customer

215

DART AEROSPACE 1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053 LIVRÉ À /Shipped To

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY, ON K6A 1K7

Ph: 613-632-5200 Fax: 613-632-1053

COMMANDE DU CLIENT BON	DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDI Order Date	TRANSPORTEUR Carrier
PO20103		A2	2013/6/7	CLIENT
QUANTITÉ No. PIÈCE / Quantity Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE Part Descripti		POIDS Weight
40 646)9711 (40) BLADE REFERENCE TO 58-62 RC MATERIAL: A		ON .		11,
TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIR Container Con	RES CONTENEUR	
BOITE DE CARTON	1			
CERTIFICAT EMPAQUETAGE Packing			ÉE / Quantity Shipped : DIÉ / Weight Shipped :	40 11,00
	Q	UANTITÉ RESTANTE	E / Quantity Remaining :	
		POIDS RESTAN	IT / Weight Remaining :	0,00
	·	·		
CERTIFICAT				
CERTIFICAT		QUANTITÉ EXPÉD	IÉE /Quantity Shipped:	40

Date:

Signature:



Tél. 450 473-1884 Télécopieur/Fax administration 450 491-5498 Félécopieur/Fax production 450 491-6454

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL	CHARGEMENT
order	load
186982	4

CLIENT / customer DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON KBA 1K7

UVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON KBA 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CUENT	MATÉRIEL	CODE DE TRAITEMENT	NUMÉRO DE LOT
	customer shipper no.	material	mat'l heat code	lot number
PO20103	201	A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement | SPÉCIFICATIONS / specifiedTESTS EXÉCUTÉS / performed | RÉSULTATS DE TESTS / results |
HARDNESS | 58 - 82 | HRC | 40 | 59.0 - 81.0 | HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description	
40) 11	646.9711 (40) BLADE	
		REFERENCE 102546 TO 58-62 RC	
		MATERIAL: A2 CONTENANT: 1 BOÎTE DE CARTON	ć a

COMMENTAIRES / comments

CERTIFIÉ par / Certified by: DATE: 2013-06-10

METCOR INC. 560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
186982	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON K6A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT Customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT	NUMÉRO DE LOT lot number							
PO20103		A2									
	SPÉCIFICATIONS DU PROCÉDÉ processing specifications										

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement | SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed | RÉSULTATS DE TESTS / results | HARDNESS | 58 - 62 | HRC | 40 | 59.0 - 61.0 | HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
40	11	646.9711
		(40) BLADE REFERENCE 102546 TO 58-62 RC MATERIAL: A2
		CONTENANT: 1 BOÎTE DE CARTON

Operation	Temp. spécifiée Specified Temp		Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complété Date complete
1.00 CONT. INIT.	LAVAGE		si nécessaire		,		-			
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1200	0:30	VAC			393				
4.00 PREHEAT 2		0:30	VAC			393				
5.00 VAC HARDE	1800	1 hrs 30 minutes	VAC		AZOTE	393		- NI ANIA MANAGAMANANANANANANANANANANANANANANANANA		
6.00 TEMPER	400+/-10°F	2 hrs	air			617				
7.00 TEMPER 2	400+/-10°F	2 hrs	air			617		-		

METCOR INC. 560 BOUL. ARTHUR-SAUVÉ ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL	CHARGEMENT			
order	load			
186982	1			

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to: DART AEROSPACE 1270 ABERDEEN HAWKESBURY

ON K6A 1K7

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #		Heure d'entrée Time In	Date Complétée Date complete
8.00 HARDN INS									
9.00 FINAL INSP							06-10-2013		06-10-2013

COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée.

Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandées ont été faites et documentés.

Aucun changement ou dérogation n'a été faite par rapport au traitement thermique demandé.

On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiés.

All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:	DATE: 2013-06-10
	1 - 40
	\ \Z

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client /We certify that all the information on this report is exact and in accordance with the order requirements.

Page 2 / 2